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Title : Conservation Status of the Black Sea Bottlenose Dolphin (*Tursiops truncatus ponticus*): An Assessment Using Morphology and Genetic Variation

Category : Conservation

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Abstract : The bottlenose dolphin (*Tursiops truncatus ponticus*) is one of three species of cetaceans living in the Azov-Black Sea basin. Until 1966, Black Sea cetaceans were mainly threatened by dolphin fisheries. Since then, anthropogenic impacts from pollution, diminishing food resources, live catches, diseases and physical injuries have killed more than 5 million Black Sea cetaceans. Despite many studies of bottlenose dolphins elsewhere, data on Black Sea populations are scarce. Thus, the overall status of Black Sea bottlenose dolphins is unclear and previous attempts to protect them have failed.

The aim of this study is to estimate the degree of morphological distinctiveness and genetic isolation of Black Sea bottlenose dolphins from Mediterranean populations. Cooperation with researchers from countries surrounding the Black Sea facilitated access to genetic material and skulls (for morphological analysis).

Seventy-four bottlenose dolphin skulls from the Black Sea (27), the Mediterranean Sea (27) and the Atlantic Ocean (20) were sampled for 31 cranial measurements.

Mitochondrial DNA (mtDNA) variation in 102 bottlenose dolphins was compared among the same localities, which were analyzed as putative populations. Preliminary results from 1100 base pairs of control region show that 70% of mtDNA haplotypes in the Black Sea are unique. A principal component analysis performed on 23 skull variables indicates that size is the major discriminant component between populations. Black Sea bottlenose dolphins are significantly smaller than the contiguous Mediterranean populations.

Conservation and management policies are typically implemented based on genetic or morphological data in absence of the other. This study shows how a more rigorous assessment of the evolutionary and ecological status of cetacean populations can be attained by combining morphological and genetic data.